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A REVIEW OF THE PATTERN OF INTENTIONAL AND UNINTENTIONAL POISONING IN SINA HOSPITAL, AHVAZ, IRAN

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ABSTRACT

Introduction: Deaths caused by poisoning in the different regions are different and the correct health care planning in the field of toxicity in any area need Statistics specific to the region. According to the poisoning in young and active community can be seen far more than other age groups, preventive measures and treatment doesn't seem sufficient and there are higher mortality statistics in this field. This study aimed to determine the type of poisoning symptoms. **Materials and Methods:** This retrospective study was conducted on hospitalized patients with diagnosis of poisoning at the Sina Hospital in Ahvaz, Iran. Data relating to patients, including age, sex, location, visit time after poisonings time, the duration of hospital admission, being admitted to ICU, use of antidote, the mortality rate, the cause of poisoning, the type and number of the drug consumed, were inserted in a questionnaire that was prepared for the same purpose. Data were analyzed using the SPSS. **Results:** In the study a total of 1037 patients were evaluated. 46.9% of the population male and the rest were female. The highest prevalence was in the age group of 15-24 years (55%). 87.9% of patients were poisoned to commit suicide and 12.1% were accidentally poisoned. The most common cause of the poisoning was medicinal poisoning among which included respectively, are tricyclic antidepressants, benzodiazepines, the Opium and Drug Tramadol included most cases of the drug toxicity. Finally, 0.8% of the cases studied died after poisoning. **Conclusions:** Due to the prevalence of the use of drugs in attempts for suicide, necessary training should be given and doctors should be stressed to refrain from the excessive use and without prescription of the drugs.

KEYWORDS: poisoning; Clinical symptoms; Ahvaz; pattern.

INTRODUCTION

In recent decades, due to increased production and available chemicals, including medicines, synthetic materials and various pesticides, poisoning caused by these materials were rising. So that the fifth leading cause of death in America is poisoning and 15-20% of cases referred to the emergency are poisoned patients.[1-2] A half of the patients (50%) in general ICU are poisoned patients and all coma patients without detection should be examined and diagnosed by the clinical toxicology.[1-4] Poisoning can be a result from accidental use of drugs and chemicals or intentional use of them to suicide (many cases of suicide occur by medicinal poisoning) or a criminal poisoning.[5]

Given the poisoning is considered as important medical emergency and compared to the rest of the cases, have more ability to treatment, their prevention and treatment can significantly reduce the death rate. Deaths caused by poisoning in the different regions are different and the correct health care planning in the field of toxicity in any area need Statistics specific to the region. Given the poisoning in young and active community can be seen far more than other age groups, preventive measures and treatment does not seem sufficient and there are higher mortality statistics in this field. Therefore, this study aimed at understanding the pattern of intentional and intentional poisonings in Sina Hospital of Ahvaz.

MATERIALS AND METHODS

This cross-sectional study was conducted on all patients admitted with a diagnosis of drug intoxication in the Sina Hospital, Ahvaz, Iran from October 2006 to March 2011. The samples were collected through a review of medical files contained in this archive of the hospital and information related to patients included: visit time after taking, the duration of hospitalization, to be admitted to ICU, use of antidote, the mortality rate, the cause of poisoning, the type and number of the consumed drug, were inserted in a questionnaire that was prepared for the same purpose. The t-test was used for comparing between two groups and ANOVA was used for comparison between groups of data; then, the data were analyzed using the SPSSversion 20.

RESULTS

In this study, 1037 patients referred to the Sina Hospital of Ahvaz were investigated during 2006 -2012. Of these, 46.9% were male and the rest were female. The highest frequency of

intoxication was in the age group of 15-24 (55%) and the lowest was in the age group of 55-64 (0.9%). lowest age reported in the poisoned patient was one month old and the oldest was a 77-year-old patient. Other demographic information is given in table 1.

Out of subjects, 912 (87.9%) were poisoned with an intention for suicide and 125 people (12.1%) were accidentally poisoned. 822 people (79.3%) after ingesting drugs and 72 persons (6.9%) with alcohol consumption and 77 (7.4%) after the intake of poison and 20 people (1.9%) by gas and 46 (4.4%) had been poisoned by other substances (oil, gasoline, a local compound called the *noam* prepared from the skin of the poppy and containing opium, and so on). The most common causes of the poisoning were respectively tricyclic antidepressants (176 cases; 17%), benzodiazepines (133 cases, 12,8%) and the Opium (65 cases, 6.3%) and Tramadol (30 cases, 2.9%).

In this study, patients with an initial symptom referred as follows: 597 patients (57.6%) with early gastrointestinal symptoms (such as nausea and vomiting); 245 (23.6%) with varying degrees of reduced levels of alertness; 62 patients (6%) with the complaint of shortness of breath; 36 patients (3.5%) with complaints of dizziness; 24 cases (2.3%) with heart problems; 23 patients (2.2%) with the complaint of the headaches; 17 cases (1.6%) with seizures; and 33 people with other symptoms. From among medicines, most gastrointestinal symptoms created was after taking tricyclic antidepressants and most symptoms after taking benzodiazepines was reduced levels of consciousness. In the process of treatment of the patients, the antidote was used in 157 patients (15.1%). 379 people (36.5%) were hospitalized for less than 24 hours, 456 people (44%) for 24 to 72 hours and 202 people (19.5%) for more than 72 hours. Of the1037 patients under study, 91 cases (8.8%) need for hospitalization in the intensive care unit. According to the results obtained, people who were poisoned with pesticides and alcohol, had greater need for hospitalization in ICU.

Most of those who were hospitalized from 24 to 72 hours, had used tricyclic antidepressants and benzodiazepines; in addition, the patients poisoned by pesticides and alcohol were generally hospitalized greater than 72 hours,

Of the1037 patients, 8 people (0.8%) died after poisoning, which the highest number of deaths occurred after poisoning with pesticides.

DISCUSSION

One of the most important areas in every setting of emergency is always poisoned patients, which in some cases, due to some non-specific boards arising from toxic factors, we are faced with several difficulties in the diagnosis and treatment field of these patients. The present study showed that 87.9% of the poisoned inpatients were persons who attempted to commit suicide.

In the present study, the highest prevalence was in the age group of 15-24 (55%). In other research conducted in Iran, also this age range has been known as the most common age as for committing the suicide.[8-11] In the study, 46.9% of the patients were male, which is consistent with similar studies conducted by Mousavi et al. and Karami *et al.*[12-13]

In this study, 872 (84.1%) were urban and 165 (15.9%) were rural, which is consistent with similar studies conducted in Sari (76.6% urban) Khorramabad (77.4% urban) shahrood (88.5% urban).[12,14]

A total of 335 people (32.3%) were married and 702 (67.7%) were single, which is consistent with studies conducted in Sanandaj (64.1% single) shahrood (61.9% married).[12,15]

In this research the cause of poisoning in the 79.3% of cases was arising from eating the medication that is consistent with the result of studies performed by Masoomi *et al.* and Azin *et al.*[16,17] The most common toxicity factor drugs in our study were respectively tricyclic antidepressants, benzodiazepines, and opium, which is consistent with a study conducted by Karami et al.[13]

According to the different studies, along with the increased prescription of anti-depression drugs in many countries the rate of suicide attempt has been increased, as well. Studies conducted in Sweden, Denmark, Finland, Norway and Australia have shown that the increased intake of anti-depressions while brings down the chances of successful suicides by controlling depression as a risk factor in suicide-related measures, but simultaneously increases the cases of intoxication due to medication. It is interesting that attempted suicide by overdose or the increase of cases of poisoning have not been observed in studies conducted in Italy, Austria and Ireland. However, it is difficult to opine on this issue, because many of these drugs and other drugs that are used in psychiatry, are used as the way to suicide attempt may be used especially during the first months of treatment which increases

the chance of suicide-related behaviors, but they can cure many diseases associated with suicide.[18]

In the present study, among the drugs that have been used with a self-harm intention the tricyclic antidepressants have the highest frequency. This issue can be attributed to several factors:

(A): Many of these individuals suffer from psychological disorders and some of them are under drug therapy for this reason. This can explain the use of psychiatric drugs for the suicide attempt.

(B): Among the psychiatric drugs, the tricyclic antidepressants, benzodiazepines, in particular, diazepam are known more than other medications among the very people and are used repeatedly as a sedative or to solve sleep problems, and there are always a lot of them in many homes.

(C): A lot of this category of medications are administered by physicians and this may cause people become more familiar with these drugs. Sometimes when prescribing medications some considerations are not considered[19-20], for example, the mental status of patients and the number of pills administered and whether the drugs should be delivered directly to the patient or to another trusted person in his or her family.[19-20]

For prevention of intentional and unintentional poisonings with pesticides the numerous preventive measures have been done, *e.g.*, nowadays pesticide materials are presented to humans with a more limited toxicity (of course, Class II organophosphates) and even in countries like Sri Lanka taking of older organophosphates has been generally prohibited since 1995. Meanwhile, the next follow-up showed that this change in the pattern of consumption of the poison has not imposed considerable damages to the amount and quality of production.[21]

In the therapy process of the subjects, the antidote was used for 157 patients that it is inconsistent with a similar study conducted in Razi Hospital (where antidote was used for 43.6% of patients) that this is probably due to the presence of poison specialists at Razi Hospital and the availability of antibiotics and intoxication and antidote ward.[22] Out of 1037 patients 8 people (0.8%) died after poisoning that is consistent with a study conducted in Shahrood (0.8%).[12] One of the restrictions of our study was being retrospectives of the study and missing data caused by defects of the files.

CONCLUSION

According to the above discussion, it can be further emphasized the several important points:

(A): The most common intoxication factor in those who referred to the poisoned wards is medicine. About three-quarters of these cases are related to the issue of suicide attempt. So, in addition to facilities, equipment and expertise human factors to controlling the side effects of poisoning and to save the patient's lives immediately, the hospitals that admit, shall be able to meet the psychological and even legal considerations and ability to follow up the patient's condition to limit seriously risk of harm to their own.

(B): In terms of access to the drug, the promotion of the culture of administration of medication by physicians and pharmacists and in particular access to drugs with highly lethal complications seems to be necessary. Of course, this should be done in addition to approving and updating inference rules and acceptable monitoring system.

(C): With respect to the frequency of use of the drug for the suicide attempt, pharmaceutical factories in our country, like in some other countries, should revise on how to package physically, and also the amount of impressive substance that is delivered to the patient.

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